

REMARKS

First, Applicants note the Examiner's "Claim Interpretations" set forth in the Office Action (page 2, ¶¶2-3). Applicants respectfully remind the Examiner that the Federal Circuit has stated, "claim terms must be given their ordinary and accustomed meaning unless the patent expresses an intention to impart novel meaning to the claim terms." Sunrace Roots Enter. Co., LTD. v. SRAM Corp., No. 02-1524, 2003 U.S. App. LEXIS 14338, at \*11 (Fed. Cir. July 17, 2003). However, even if the claim interpretations put forth by the Examiner are accepted, Applicants believe the rejections of the claims fail to show anticipation or obviousness and the application is allowable. The remainder of this response is made under an assumption that the Examiner's interpretations, to the extent they are understood by Applicants, are correct.

Claims 1-9, 11-14, and 16-19 stand rejected under 35 USC §102(e) as being anticipated by US patent number 6,223,326 to Fields et al. ("Fields-1"). The rejection is respectfully traversed because the rejection fails to establish a *prima facie* case of anticipation. To establish a *prima facie* case of anticipation, the rejection must show that all the limitations are identically shown in a prior art reference, which the rejection fails to do.

As to claims 1, 18, and 19, the rejection fails to show that Fields-1 identically teaches the limitations that relate to entering the functional design elements into a database; entering documentation elements into the database; linking the functional design elements with selected ones of the documentation elements; simulating a testbench with the design module, whereby simulation results are generated; storing the simulation results in the database; and linking the simulation results with the functional design elements. The rejection fails to show that Fields-1 identically shows all the limitations.

For example, the rejection alleges that Fields-1 teaches simulating a test bench with the design module, storing the simulation results in the database, and linking the simulation results with the functional design elements. However the cited portions of Fields-1 (FIG. 1, elements 104, 110 and associated text; and FIG. 3, elements 306-318) do not appear to mention a testbench, simulation, or storing simulation results in any manner. These elements appear to call out a performance/density analyzer, a replacement generator, and steps for converting a design to an approximately equivalent design. Furthermore, these or other elements of Fields-1 do not appear to be covered by a reasonable reading of the claim limitations. Therefore, the rejection fails to show that claims 1, 18, and 19 are anticipated, and the rejection should be withdrawn. Otherwise, an explanation is requested as to the specific elements of Fields-1 that are believed to correspond to the claim limitations.

Claims 2-17 each depends, either directly or indirectly, from claim 1, and each includes all of the limitations of claim 1. Therefore, for at least the reasons set forth above with respect to claim 1, claims 2-17 are allowable.

Furthermore, as to claim 2, the rejection fails to show that Fields-1 identically shows the limitations that relate to translating the functional design elements into a netlist; and linking elements of the netlist with selected ones of the functional design elements. For example, the cited portions of Fields-1 (FIG. 1, 108 and associated text) do not appear to mention linking netlist elements to functional design elements. This portion appears to teach a repository of problematic design elements that are associated with suitable replacements and recommendations. Furthermore, no other elements of Fields-1 appear to be covered by a reasonable reading of these limitations. Therefore, the rejection fails

to show that claim 2 is anticipated and the rejection should be withdrawn. Otherwise, an explanation is requested as to the specific elements of Fields-1 that are believed to correspond to the claim limitations.

The rejection of claim 3 is deficient for reasons similar to those set forth above in response to the rejection of claim 2. Claim 3 includes limitations that relate to linking elements of the physical implementation with selected ones of the functional design elements. The cited portions of Fields-1 does not appear to show or suggest such linking. Therefore, the rejection fails to show that claim 3 is anticipated.

Claim 4 includes limitations that relate to entering simulation elements in the database; and linking the simulation elements to associated ones of the design elements. The rejection cites Fields-1's elements 104 and 108 and associated text as teaching these limitations. However, element 104 is a performance/density analyzer, element 108 is a database of problematic design elements and suitable replacements. Neither these elements nor the cited text shows or suggests entering simulation elements in a database and linking them to design elements. Because the cited portions of Fields-1 do not in any apparent way teach these limitations, an explanation of how the limitations are being read to cover these elements of Fields-1 is respectfully requested.

Claim 5 includes limitations that relate to entering documentation for a design script in the database; and linking the documentation of the design script to the design elements comprising the design module. The cited portions of Fields-1 make no reference to any teaching that resembles a design script, and the cited portions are the same portions cited as teaching the limitations in claim 1 that relate to entering functional design elements and associated documentation in a database. It is clear that the

limitations of claim 5 are distinct from the limitations of claim 1. However, no specific elements of Fields-1 are cited as teaching these distinct limitations. Therefore, the rejection fails to show that claim 5 is anticipated.

Claim 6 includes limitations that relate to simulation elements, and as explained above, the rejection fails to show that Fields-1 teaches limitations related to simulation. Therefore, claim 6 is not shown to be anticipated.

As to claims 7 and 8, the rejection fails to show the limitations that relate to inspecting the functional design elements and simulation elements for associated documentation; and reporting documentation deficiencies in association with the functional design elements and simulation design elements. The rejection alleges that Fields-1 shows these limitations with the design analyzer 106, database 108, and replacement generator 110. However, the alleged associated text mentions neither inspecting for documentation nor reporting documentation deficiencies. Clarification is requested if the rejection is maintained. Otherwise, the rejection should be withdrawn.

As to claim 11, the rejection fails to show that Fields-1 teaches the limitations that relate to inspecting the functional design elements for adherence to predefined design rules; and reporting violations of the design rules. The rejection cites Fields-1's design analyzer, database 108, and replacement generator and associated text as teaching these limitations. However, the rejection cites these very same elements as teaching the limitations of claim 1 that relate to entering functional design elements in the database. The rejection provides no additional elaboration as to others of Fields-1's elements that are construed as being covered by the design-rule limitations versus the functional-design-element limitations. Furthermore, these portions of Fields-1 have no discernable suggestion of the design-rule

limitations, much less any suggestion of inspection for design rules. Therefore, the rejection fails to show that claim 11 is anticipated.

The rejection of claim 12 is similarly deficient.

As to claim 13, the rejection fails to show that Fields-1 teaches the limitations that relate to monitoring changes made to the functional design elements; and indicating which of the functional design elements are dependent on the changes. The cited portions of Fields-1 show that selected elements of an input design module are replaced with suitable alternative elements. No teaching has been cited as teaching the monitoring of changes and indicating dependencies on the changes. Therefore, the rejection fails to show that claim 13 is anticipated.

As to claim 14, the rejection fails to show that Fields-1 teaches the limitations that relate to translating the functional design elements into a physical implementation; and linking elements of the physical implementation with selected ones of the functional design elements. For example, the rejection cites no teaching of linking the physical implementation elements to selected ones of the functional design elements. The cited elements of Fields-1 appear to generally teach analyzing an input design module for potentially problematic design elements and replacing the problematic elements with suitable alternatives. It is not apparent how the translating and linking limitations are being construed to be taught by Fields-1. Therefore, the rejection fails to show that claim 14 is anticipated.

Claims 16 and 17 include limitations that relate to displaying design elements associated with errors in simulation results and displaying documentation elements associated with errors in simulation results. As explained above, the rejection fails to show that Fields-1 teaches the limitations that relate to simulation, simulation results,

and linking to functional design elements. Therefore, the rejection fails to show that Fields-1 teaches the further limitations of claims 16 and 17.

The rejection fails to show that claims 1-9, 11-14, and 16-19 are anticipated by Fields-1 and should be withdrawn.

Claims 1-19 stand rejected under 35 USC §102(e) as being anticipated by US patent number 5,995,736 to Aleksic et al. ("Aleksic"). The rejection is respectfully traversed because the rejection fails to establish a *prima facie* case of anticipation.

The rejection fails to show that the Aleksic teaches the limitations of claims 1, 18, and 19. For example, the rejection alleges that Aleksic's FIG. 3, item 36, FIG. 5, items 92-102, and associated text teach storing the simulation results in a database and linking the simulation results with the functional design elements. However, these portions Aleksic teach an automatic register generator and simulating using test vectors. There is no apparent teaching of storing the simulation results in a database and linking the simulation results with the functional design elements. If there are some specific elements of Aleksic that are being interpreted to teach these limitations, an explanation is requested. Otherwise, the rejection fails to show that claims 1, 18, and 19 are anticipated and should be withdrawn.

Claims 2-17 all depend, either directly or indirectly, from claim 1, and include all of the limitations of claim 1. Therefore, for at least the reasons set forth above with respect to claim 1, claims 2-17 are allowable.

The rejection similarly fails to show where Aleksic teaches the limitations of claim 2 that relate to linking elements of the netlist with selected ones of the functional design elements. The cited FIG. 4 and accompanying description describe a hardware system for implementing Aleksic's system (col. 7, ll. 3-17). This section describes

a memory that may include "the object oriented databases having associated templates (linked templates)." This in no apparent way identically teaches linking netlist elements with functional design elements in the database. Thus, the rejection fails to show that claim 2 is anticipated.

The rejection fails to show where Aleksic teaches the limitations of claim 3 that relate to translating the functional design elements into a physical implementation and linking elements of the physical implementation with selected ones of the functional design elements. Aleksic's system is directed to modeling registers for integrated circuit design (Title, Abstract). Aleksic's FIG. 5 describes a process for automatically modeling registers (col. 3, ll. 27-30). There appears to be no suggestion by Aleksic of preparing a physical implementation. Therefore, claim 3 is not shown to be anticipated. If the rejection is maintained, further explanation is requested.

The rejection fails to show where Aleksic teaches the limitations of claim 5 that relate to design scripts, design scripts in the database, and documentation of design scripts. The rejection alleges that Aleksic's documentation block 46 of FIG. 2 and flow for modeling registers for an IC design (FIG. 5) teach these limitations. However, there is no apparent reference to design scripts or any of the limitations relating thereto. An explanation of which specific elements teach these limitations is respectfully requested. Otherwise, the rejection should be withdrawn.

As to claim 6, the rejection fails to show where Aleksic teaches the limitations that relate to documentation for the simulation elements, entering this documentation in the database, and linking the documentation with the associated ones of the simulation elements. The rejection only generally alleges that Aleksic's documentation block 46 of FIG. 2, flow for modeling registers for an IC design (FIG.

5), and documentation template 72 (FIG. 4) teach these limitations. However, as with the rejections of the other claims, there is no apparent mention of documentation of simulation elements nor of linking this documentation to simulation elements. Therefore, the rejection fails to show that claim 6 is anticipated.

As to claims 7, 8, and 9 the rejection fails to show the limitations that relate to inspecting the functional design elements and simulation elements for associated documentation and for undesirable design characteristics; and reporting the deficiencies in association with the functional design elements and simulation design elements. The rejection generally alleges that Aleksic's documentation block 46 of FIG. 2, documentation template 72 of FIG. 4, and flow for modeling registers for an IC design (FIG. 5) teach these limitations. However, neither these elements nor the associated text makes any apparent mention of inspecting for these or other deficiencies. An explanation is requested if the rejection is maintained. Otherwise, the rejection should be withdrawn.

The rejection fails to show the limitations of claim 10 that relate to inspecting the functional design elements for undesirable hierarchical characteristics and reporting any undesirable hierarchical characteristics. The rejection alleges that Aleksic's API layer 42, connection templates 49, and functional model layer 68 of FIG. 3, along with the flow for modeling registers for an IC design (FIG. 5) teach these limitations. However, neither these elements nor the associated text makes any apparent mention of inspecting for undesirable hierarchical characteristics. An explanation is requested if the rejection is maintained. Otherwise, the rejection should be withdrawn.

As to claim 11, the rejection fails to show that Aleksic teaches the limitations that relate to inspecting the



functional design elements for adherence to predefined design rules; and reporting violations of the design rules. The rejection cites Aleksic's flow for modeling registers for an IC design (FIG. 5) teach these limitations. However, none of the steps in the flow diagram nor the associated text describes or alludes to design rules or inspecting for adherence. Therefore, the rejection fails to show that claim 11 is anticipated.

The rejection of claim 12 fails for reasons similar to the rejection of claim 11. That is, the cited sections (FIG. 5 and associated text) make no apparent mention of either design rules or providing assistance in specifying these rules. An explanation is requested if the rejection is maintained.

Claim 13 depends from claim 9 and is allowable for at least the reasons set forth above with respect to claim 9.

The rejection of claim 14 fails to show where Aleksic teaches translating the functional design elements into a physical implementation and linking elements of the physical implementation with selected ones of the functional design elements. The rejection cites Aleksic's flow for modeling registers for an IC design (FIG. 5) as teaching these limitations. However, none of the steps or associated text appears to mention a physical implementation, much less the limitations that relate to linking. Therefore, the rejection fails to show that claim 14 is anticipated.

Claim 15 includes limitations that relate to requiring specification of parameters at a top level of a hierarchy of the design module. The rejection alleges that Aleksic's API layer 42, connection templates 49, and functional model layer 68 of FIG. 3, along with the flow for modeling registers for an IC design (FIG. 5) teach these limitations. However, neither these elements nor the associated text makes any apparent mention of parameter requirements. Therefore, the

rejection fails to show that claim 15 is anticipated. If the rejection is maintained, an explanation of a specific teaching is requested.

Claim 16 includes limitations that relate to displaying the functional design elements that are linked to errors in the simulation results. The rejection fails because it only generally references Aleksic's flow for modeling registers for an IC design (FIG. 5) as teaching these limitations, and these sections do not appear in any way to link simulation results to specific design elements and display the design elements that are linked to errors in the simulation results. Therefore, the rejection fails to show that claim 16 is anticipated, and if the rejection is maintained, an explanation of a specific teaching is requested.

The rejection fails to show that Aleksic teaches the limitations of claim 17 that relate to displaying documentation elements associated with errors in the simulation results. There is no apparent teaching of these limitations in the cited flow for modeling registers for an IC design (FIG. 5). An explanation of the specific teaching relied upon is requested if the rejection is maintained.

The rejection fails to show that claims 1-19 are anticipated by Aleksic and should be withdrawn.

Statement of Common Ownership

Claims 10 and 15 stand rejected under 35 USC §103(a) as being unpatentable over Fields-1 in view of the paper entitled, "Creating hierarchy in HDL-based high density FGPA design" by Fields ("Fields-2"). The rejection is traversed because *prima facie* obviousness has not been established.

In addition, Fields-1 does not constitute prior art under 35 USC §103(c).

The present application and Fields-1 (US patent number 6,223,326 to Fields et al.) were, at the time the invention of the present application was made, owned by Xilinx, Inc.

Therefore, the rejection of claims 10 and 15 is moot and should be withdrawn.

Claims 1, 4-12, and 15-19 stand rejected under 35 USC §103(a) as being unpatentable over US patent number 5,673,199 to Gentry ("Gentry") in view of the Web pages collectively entitled, "6.111 Introductory Digital Systems Laboratory" ("Emacs"). The rejection is respectfully traversed because *prima facie* obviousness is not established. The rejection fails to show that all the limitations are suggested by the combination, fails to provide evidence in support of a motivation to combine the references, and fails to show that the teachings of the references could be combined with a reasonable likelihood of success.

The rejection fails to show all the limitations of the independent claims 1, 18, and 19. For example, the rejection alleges that Gentry suggests the limitations that relate to storing simulation results in the database and linking the simulation results with the functional design elements. However, the cited elements of Gentry's FIG. 2 and associated text only generally suggest simulation. There is no apparent mention of where the simulation results are stored, much less linking the results to specific functional design elements. Therefore, the rejection fails to show that all the limitations are suggested.

Claims 4-12 and 15-17 each depends, either directly or indirectly, from claim 1, and each includes all of the limitations of claim 1. Therefore, for at least the reasons set forth above with respect to claim 1, claims 4-12 and 15-17 are allowable.

The rejection of claim 4, which includes limitations that relate to entering simulation elements in the database and linking to the design elements, is similarly deficient. That is, Gentry neither shows nor suggests putting the simulation elements in the database and linking them to the design elements.

The rejection of claim 5 fails to show a suggestion of the limitations that relate to entering documentation for a design script in the database and linking this documentation to the design elements. The rejection relies on the same teaching of Emacs in alleging that these limitations are taught as is used in alleging that the limitations related to documentation of the design elements is taught. Those skilled in the art will appreciate that the claimed design elements and design script are distinct. Therefore, Emacs does not teach both design element documentation and design script documentation. Furthermore, there is no apparent suggestion in Emacs of design scripts or documentation thereof. The alleged motivation to combine Emacs with Gentry is deficient because it fails to recognize any distinction between design elements and design scripts.

The rejection of claim 6 fails for reasons similar to the reasons that the rejection of claim 1 fails. That is, Gentry neither teaches nor suggests storing simulation elements in the database. Thus, entering in the database documentation associated with the simulation elements in the database is not suggested.

The rejection of claim 7 fails to show that various limitations are suggested. For example, as explained above neither Gentry nor Emacs suggests simulation elements and associated documentation in a database. Furthermore, the cited teaching of Emacs merely indicates that a user is prompted for a comment after object definitions. There is no indication that a comment is required, nor is there any indication that specific content is required. Thus, it is not at all inherent that Emacs inspects and reports deficiencies.

The rejection of claim 8 fails for reasons similar to the rejection of claim 7.

The rejection of claim 10 fails because it ignores the limitations that relate to the hierarchical characteristics.

The rejection of claim 12 fails to show a suggestion of the limitations that relate to providing assistance in specifying the design rules for the functional design elements. The rejection alleges that Emacs' syntax checking teaches this limitation. However, those skilled in the art will recognize that checking VHDL syntax is distinct from providing assistance in specifying design rules. For example, the VHDL syntax implemented by a compiler is fixed, whereas specifying the design rules associated with the functional design elements implies that the rules may be customized.

The rejection of claim 15 fails because it does not address the limitations that relate to the hierarchy of the design module.

The rejection of claim 16 inexplicably relies on Emacs' compilation of VHDL as suggesting the limitations that relate to displaying the functional design elements linked to errors in the simulation results. As explained above, the rejection fails to show that Gentry suggests linking the simulation results with the functional design elements. Furthermore, Emacs is suggestive of neither simulation nor displaying the design elements linked to errors in the simulation results.

The rejection of claim 17 fails to show a suggestion of the limitations that relate to displaying documentation elements associated with errors in the simulation results. Together, Emacs and Gentry merely show preparing VHDL using an Emacs editor with a syntax checker and simulating a design. There is no suggestion, nor has any been cited that any documentation associated with errors in the simulation results is displayed.

The alleged motivations for combining Emacs with Gentry are conclusory and therefore improper. Furthermore, no

evidence is provided from the prior art to suggest the combination, and no evidence is provided to show a likelihood of successfully combining the references. Therefore, for these reasons and because the rejection fails to show a suggestion of all the limitations, *prima facie* obviousness is not established.

Claims 2-3 and 13-14 stand rejected under 35 USC §103(a) as being unpatentable over Gentry in view of Emacs and further in view the Web pages collectively entitled, "Introduction to Synopsys to XACT M1 Design Flow" ("XACT"). The rejection is respectfully traversed because *prima facie* obviousness is not established. The rejection fails to show that all the limitations are suggested by the combination, fails to provide evidence in support of a motivation to combine the references, and fails to show that the teachings of the references could be combined with a reasonable likelihood of success.

Claims 2 and 14 depend from claim 1, and claim 3 depends from claim 2. As explained above, the rejection fails to establish a *prima facie* case of obviousness of claim 1 in view of the Gentry-Emacs combination. Therefore, for at least these reasons *prima facie* obviousness is not established for claims 2 and 3.

The rejection of claim 13 fails because it does not address the limitations that relate to monitoring changes made to the functional design elements and indicating which of the functional design elements are dependent on the changes. The rejection mentions portions of XACT that relate to creating "a VHD or VER file that can be simulated for back annotation with Synopsys." This alleged teaching has no apparent relationship to the claim limitations. Further explanation is requested. Furthermore, the alleged motivation for combining XACT with Gentry and Emacs cannot be reasonably understood relative to the claim limitations. The

rejection should be withdrawn because *prima facie* obviousness is not established.

The Office Action fails to provide evidence of a suggestion of all the limitations of the pending claims, fails to provide a proper motivation for modifying the teachings of Gentry with Emacs and XACT, and fails to provide evidence of a reasonable likelihood of success in modifying the teachings of Gentry with Emacs and XACT. Therefore, a *prima facie* case of obviousness has not been established, and the rejection should be withdrawn.

#### CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

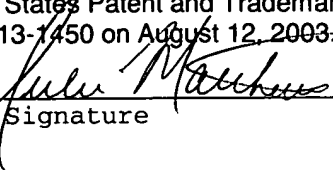
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to Director of the United States Patent and Trademark Office, P.O. Box 1450, Alexandria, Virginia 22313-1450 on August 12, 2003.

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